

M4 Junction 3-12 Smart Motorway (TR 010019) – first written representation from Campaign for Better Transport

From Sian Berry and Chris Todd, interested parties 10031660 and 10031336

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Summary – Sian Berry’s 500 word submission to register as interested party

Campaign for Better Transport strongly objects to these proposals. We will expand on this summary of the main issues in our full submission.

Increase in traffic, air, noise and light pollution

If this scheme goes ahead, traffic will increase on the motorway, roads leading to it, and the surrounding road network.

Air pollution impacts will be higher than estimated, even though the Environmental Statement (ES) already shows areas where legal limits will be breached if the scheme goes ahead. The vehicle emissions factors used in the ES were updated to be more optimistic about future reductions in 2013 [IAN 170/12 rev3], while all the emerging evidence is that the Euro 6 standards test are similar to previous standards in terms of underestimating real world emissions. Following recent legal cases, the technical advice note on assessing the risk of breaching EU directives is currently suspended [IAN175/13].

The issue of air pollution must be examined in full.

Serious concerns about safety

The Smart Motorway design has no hard shoulder and only periodic emergency refuge areas, 2.5 km apart.

The Institute of Advanced Motorists and Metropolitan Police have expressed their concerns during the consultation process, vehicle recovery organisations oppose the designs, and Highways England's own safety estimates show they are not as safe as the original 'Managed Motorways' that only used the hard shoulder at peak times, and with lower speed limits.

Compared with a baseline 3-lane motorway with hard shoulder and no Smart technology:

- Managed Motorways were found to be 56% safer in overall risk
- Smart Motorways are estimated at only 15-18% safer

If Highways England were to follow the duty of care obligation to follow good practice they would implement this scheme as a 'Managed Motorway' without all-lane running.

Increase in carbon emissions

Calculated at more than 4 million extra tonnes.

Clear benefits and reduced costs of alternatives

These include the simple alteration of putting in 'Smart' technology either a) with no hard shoulder running at all or b) with hard shoulder running only at peak times. These options would bring clear safety benefits and, without widening, cost less. Both would create less traffic, air pollution, noise and carbon than the proposed scheme.

The relative costs and benefits of these options must be assessed.

Other investments that would improve conditions for drivers without the harms outlined above include:

- improving public transport services and priority along the motorway
- implementing Smarter Choices programmes in surrounding cities and towns, reducing the number of short journeys on the motorway

Highways England now has dedicated funds for integration with public transport. These measures should be employed on the M4 before any new capacity is considered.

Impact on landscape and biodiversity

As the M4 does not have a continuous hard shoulder, the scheme entails a significant amount of new works, increasing the road's footprint on the landscape. It is hard to see how widening the road and disrupting the ecology of the surrounding land is compatible with Highways England's new Biodiversity Action Plan.

More detail, with reference to the first questions from the Examining Authority and Highways England's initial response to our points:

1. Impact on traffic

1.1 The need for revised traffic and transport modelling in the light of the new forecast scenarios (Relevant to question 1.3)

There has also been a discrepancy between actual road traffic volumes and the predictions made by successive Department for Transport traffic models, particularly over the long term. This has been

recognised by the Department for Transport and amendments have been made in the methodology for the newest forecasts, published in March 2015.

Further research is being undertaken and more changes are envisaged in future, but several changes have already been made, and are summarised as:¹

"Summary of changes to the forecasting approach

- *The introduction of a forecast scenario in which income growth does not result in rising car travel for comparison with other scenarios where increased income increases car ownership and car travel.*
- *The introduction of a forecast scenario where the past trend in trip rates has been extrapolated forward to 2040 for comparison with the other scenarios where trip rates have been held constant from 2010.*
- *Update to the speed and capacity of the London road network to reflect observed data.*
- *Update of fuel price, fuel efficiency and GDP forecasts.*
- *Update to the capacity of the road network to reflect the December 2014 Road Investment Strategy."*

The resulting forecasts include a future scenario in which traffic growth over 25 years is minimal and congestion remains almost flat. This brings the traffic modelling and the perceived need for the scheme into question, at the same time as making the risk of induced traffic from the widening project more serious, as it would work to undermine these positive trends.

We believe the ExA should ask for publication of revised traffic modelling for the M4 Smart Motorway project and a revised business case in the light of these new scenarios.

These new documents must include at least a sensitivity test against the new lowest forecast (Scenario 3) and an estimate of the effect of this on the monetised time savings for drivers and the overall estimated benefit-cost ratio of the scheme.

Fig 1.1: New scenarios in the 2015 National Road Traffic Forecasts²

Table 3.1: Summary of variations between forecast scenarios			
	Trip rates	Income relationship	Macroeconomic
Scenario 1	Historic average	Positive and declining	Central
Scenario 2	Historic average	Zero	Central
Scenario 3	Extrapolated trend	Positive and declining	Central
Scenario 4 ¹⁸	Historic average	Positive and declining	High oil, low GDP
Scenario 5	Historic average	Positive and declining	Low oil, high GDP

¹ National Road Traffic Forecasts 2015, Department for Transport, March 2015.
<https://www.gov.uk/government/publications/road-traffic-forecasts-2015>

² National Road Traffic Forecasts 2015, Department for Transport, March 2015.
<https://www.gov.uk/government/publications/road-traffic-forecasts-2015>

Fig 1.2: Forecasts for total traffic under the new scenarios³

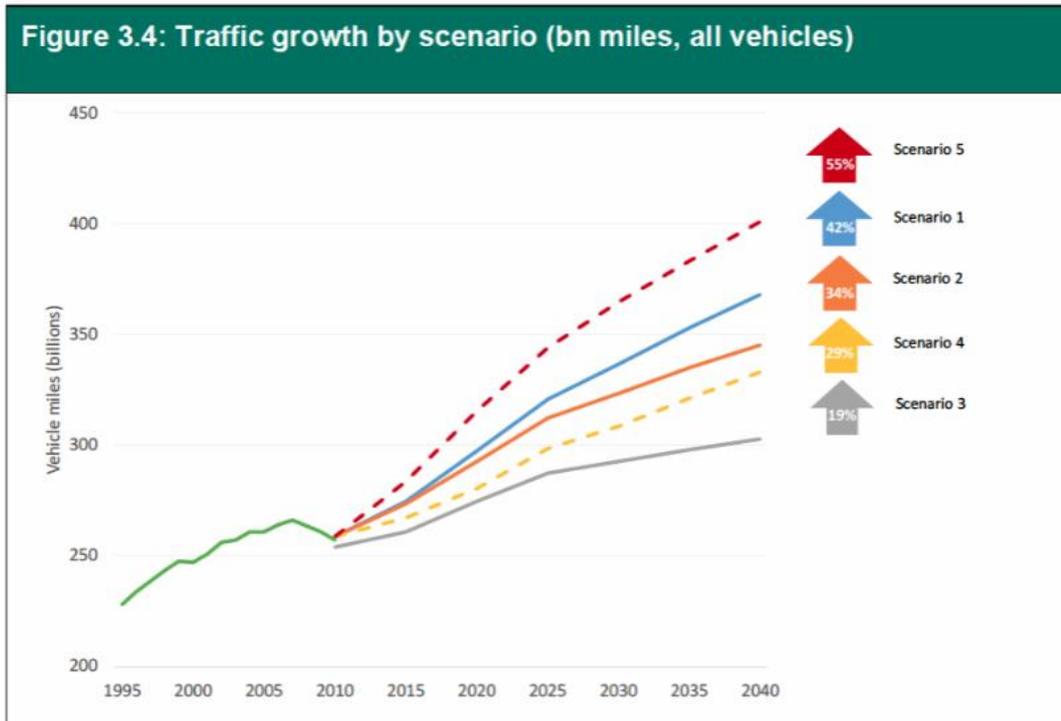
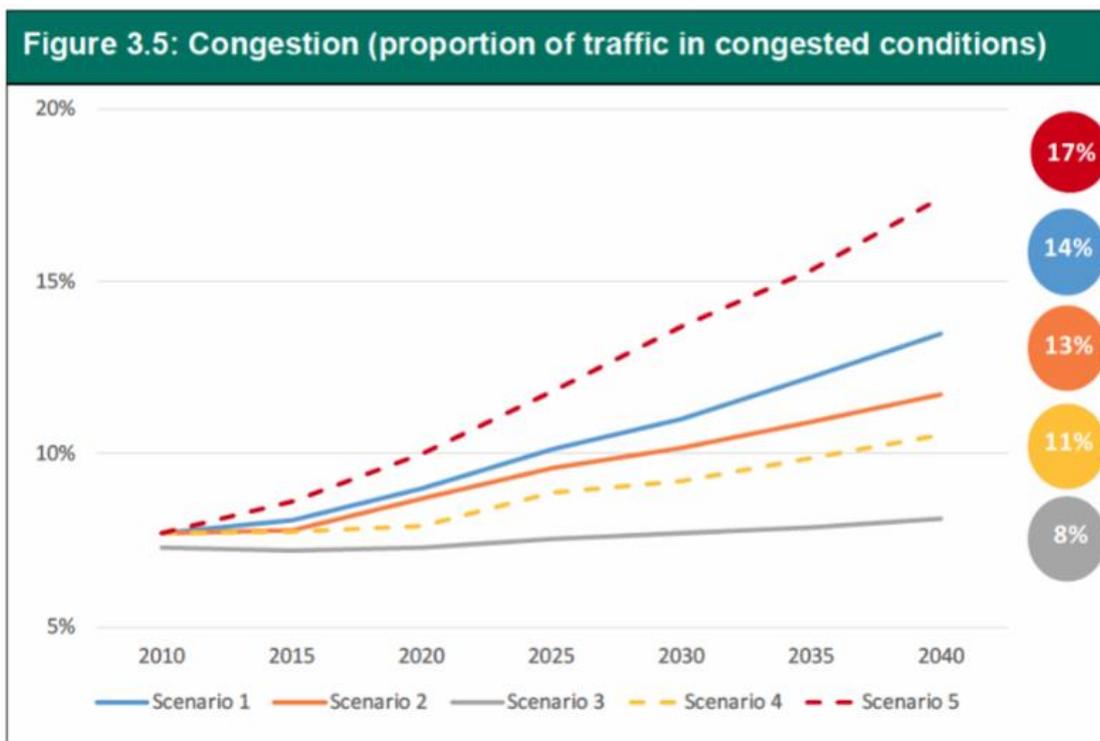


Fig 1.3: Forecasts for congestion under the new scenarios⁴

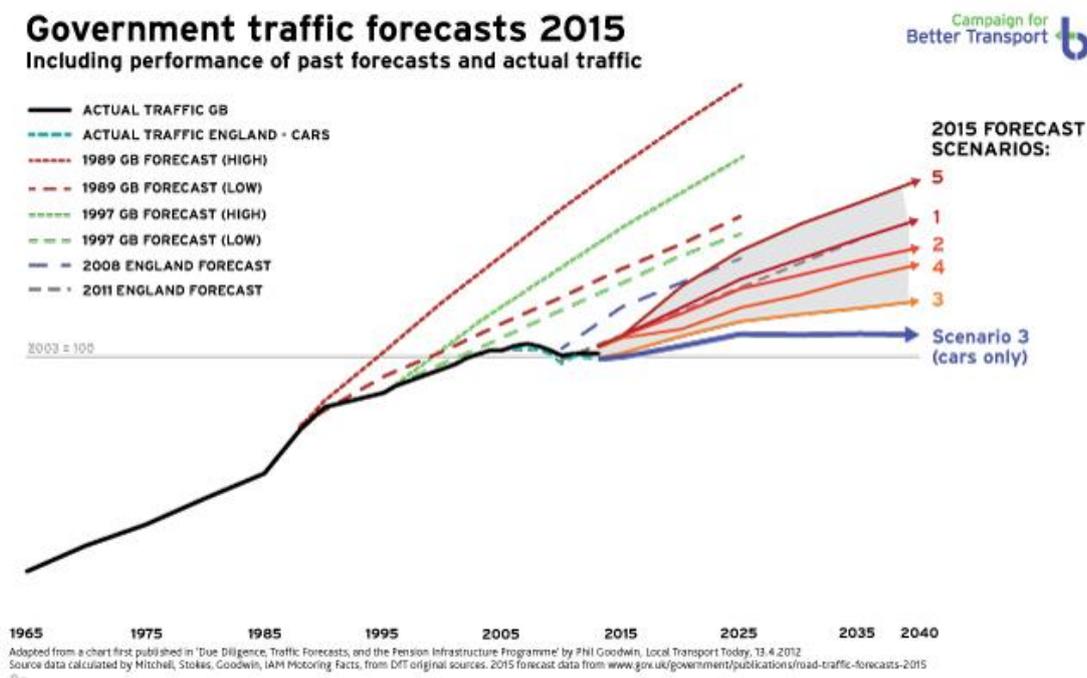


³ ibid

⁴ National Road Traffic Forecasts 2015, Department for Transport, March 2015.

<https://www.gov.uk/government/publications/road-traffic-forecasts-2015>

Fig 1.4: Comparison of the scenarios with past national forecasts⁵



1.2 Induced traffic from the new capacity proposed is likely to be an underestimate

(Relevant to questions 1.3, 2.2 and 2.4)

The current scheme significantly increases road capacity on the M4 at all times of the day. This will induce new traffic that will have an impact across a wide area.

Induced traffic on most major road schemes has historically been seen at 10 to 20 per cent.⁶ Phil Goodwin, one of the leading authors of the SACTRA report which looked extensively at the phenomenon in the 1990s said:

"The average traffic flow on 151 improved roads was 10.4% higher than forecasts that omitted induced traffic and 16.4% higher than forecast on 85 alternative routes that improvements had been intended to relieve. In a dozen more detailed case studies the measured increase in traffic ranged from 9% to 44% in the short run and 20% to 178% in the longer run. This fitted in with other evidence on elasticities and aggregate data."

The effects are particularly pronounced around urban areas, and where there is suppressed demand. Figure 1.5 is based on a chart produced by John Elliott, a transport consultant who studied the induced traffic from road widening in London in the 1980s.⁷

⁵ Adapted from a chart first published in 'Due diligence, traffic forecasts and the Pension Infrastructure Programme' by Phil Goodwin, Local Transport Today, 13/4/2012

⁶ Trunk roads and the generation of traffic. SACTRA report 1994
<http://webarchive.nationalarchives.gov.uk/20121107103953/http://www.dft.gov.uk/publications/trunk-roads-and-the-generation-of-traffic/>

⁷ The effects of strategic road network changes on traffic. Purnell S, Beardwood J and Elliot J. World Transport Policy and Practice 5/2 1999, 28-48 <http://www.eco-logica.co.uk/pdf/wtpp05.2.pdf>

Particularly instructive is the example of the A40 in West London, a parallel corridor to the M4, where very significant induced traffic was seen after the construction of the Westway and associated road widening.

We therefore question the calculations presented by Highways England in their response to our initial representation.

In this they say:

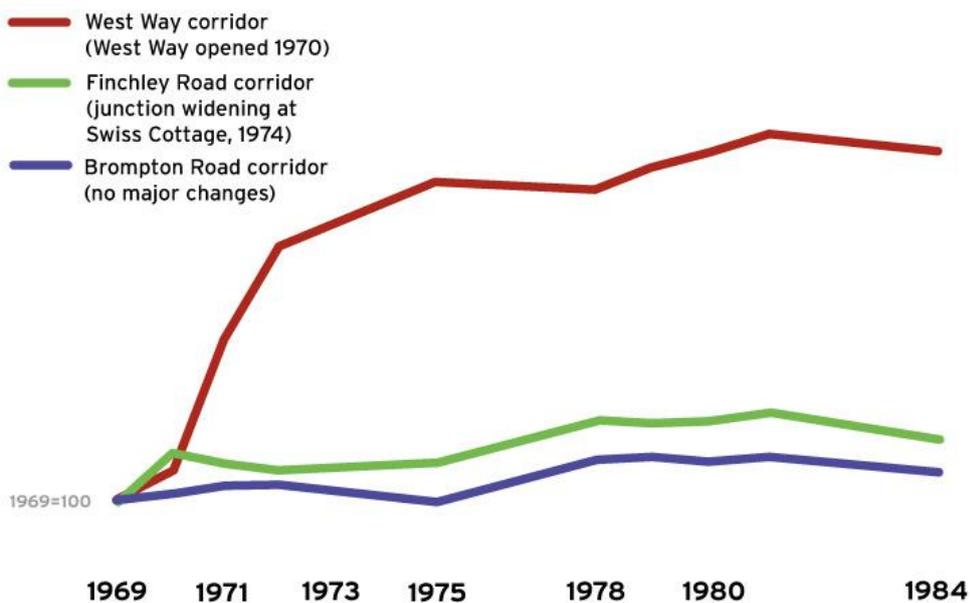
“As shown in Table A-5, the overall levels of induced trips, relative to the Do-Minimum scenario, are less than 0.3% in all time periods in both forecast years. Over a 12 hour day, the level of induced traffic would equate to some 6,500 additional trips out of a total of 465,000 or 0.14%”

In reality, induced traffic on the M4 is likely to be much more significant than stated, as the potential for new capacity, especially in areas of congestion, to encourage mode, time and route shifting is well known and almost always underestimated.⁸ Higher levels of induced traffic than stated would have a detrimental effect on local authority transport plans, including for walking and cycling, and would not be compatible with plans to reduce traffic in these areas.

Given experience with previous road-building schemes, the applicants should be asked to expand in more detail on the reasons for their assumptions about induced traffic.

Fig 1.5: Induced traffic in road corridors into and within London⁷

Effect of road widening in London, 1960s-1980s



⁸ Examples given in Beyond Transport Infrastructure, 2006, Transport for Quality of Life for CPRE <http://www.cpre.org.uk/resources/transport/roads/item/3113-beyond-transport-infrastructure>

2. Impact on air pollution

(Relevant to questions 4.1.2 and 4.6.1 – 4.6.8)

We welcome the ExA's questions, which seek clarity on the ES and air pollution, and will reserve most of our comments on this issue until the answers are received.

In brief, we have serious concerns over the very low calculated impact of the scheme reported in the ES. These are partly as a result of the low traffic impact assessed, but there are separate issues with the methods and figures used to calculate vehicle emissions, and with the method used to assess the significance of the effects calculated.

2.1 Likelihood that future vehicle emissions estimates will be far too low

The most recent EURO 6 standards intended to reduce vehicle emissions had already been called into question in terms of the real-world reductions they bring, compared with those demonstrated in tests, at the time of the application.^{9,10}

We note that one of Highways England's own Interim Advice Notes (IANs) giving guidance on the methodology used to carry out the assessment is currently suspended, with a new note pending – this is IAN 175/13.¹¹ The LTT (Long Term Trends) methodology in IAN 170/12 v3, which is described by Highways England in their response to our initial representation, accounts for some of the discrepancy between real-world concentrations and what would be expected if vehicles were getting cleaner in accordance with recent EURO standards.

However, IAN 170/12 v3 offers two separate options for accounting for the gap. The first (Long Term Trends (LTT)) only accounts for this to the extent of taking a linear extension of the long term trend. The second option is an alternative 'interim' version of the LTT method, which is more pessimistic still about the progress made on cleaner vehicles and assumes only Euro 6 will be effective.

IAN 170/12 v3 says:¹²

“A judgement should be made as to which set of NOx and NO2 projections (Defra’s technical guidance, long term trends or interim alternative long term trend projections) should be relied upon to form a concluding view of significance.”

The diagram in figure 2.1 is taken from IAN 170/12 v3, and shows schematically the likely effect of applying the different projections to emissions factors used in estimates of the effects of transport projects.

It is unclear whether Highways England have used the interim estimate or the older LTT method in their calculations. **Clarification should be sought on this matter by the ExA.**

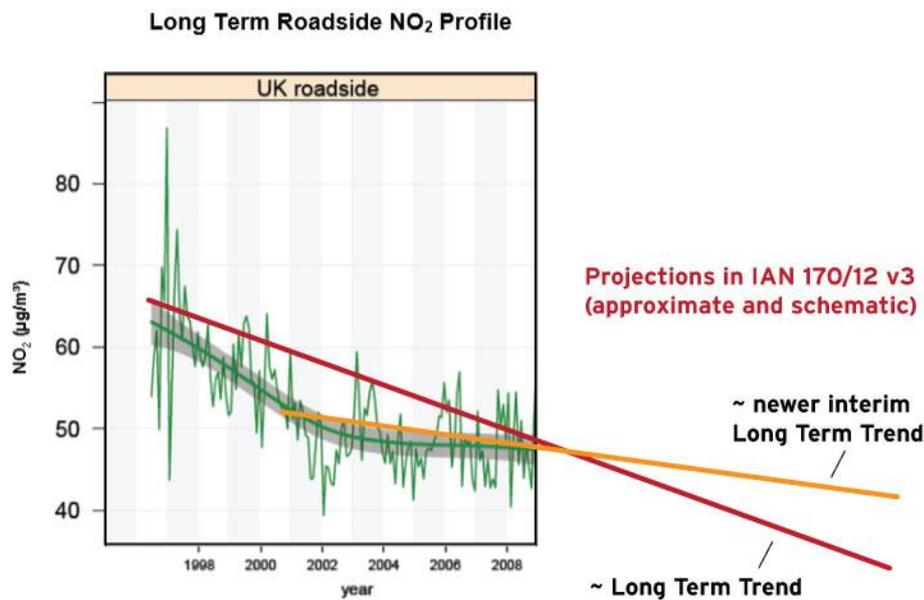
⁹ High diesel NOx emissions 'likely for decades' due to failing tests. Transport and Environment, August 2014
<http://www.transportenvironment.org/News/high-diesel-nox-emissions-%E2%80%98likely-decades%E2%80%99-due-failing-tests>

¹⁰ The great diesel car deception speeding us to a toxic death, Sunday Times, 24 May 2015
http://www.thesundaytimes.co.uk/sto/news/uk_news/Health/article1560169.ece

¹¹ Details of Interim Advice Notes: <http://www.standardsforhighways.co.uk/ians/>

¹² <http://www.standardsforhighways.co.uk/ians/pdfs/ian170v3.pdf>

Fig 2.1: Air pollution emissions projections in IAN 170/12 v3



Recent revelations that car-makers have been deliberately circumventing test procedures show that the difference with recent vehicles is in fact much greater than expected and that the effectiveness of the Euro 6 standards are also in doubt. Investigations by newspapers and the Transport and Environment organisation in Brussels have shown the real level of emissions from many vehicles on the road to be multiple times higher (up to 22 times higher) than reported in tests.¹³

A professional opinion should be sought on the impact of the recently recorded failures of vehicles to meet the EURO 6 standards on the assumptions used and assessments provided in the ES.

The use of unrealistic emissions factors will serve to vastly reduce the impact of the scheme modelled, and we recommend that the Environmental Statement is reassessed using a flat trend of current vehicle emissions, assuming no improvement at all occurs as a result of EURO 6, as a likely worst case scenario.

2.2 Further legal developments on the issue of air pollution

(Relevant to question 4.6.1)

Emerging policies

The position of the UK in terms of its non-compliance with EU air quality legislation¹⁴ is becoming increasingly clear, casting doubt on the legality of any major road building near or within polluted urban areas. Recent developments include:

- A 2013 Supreme Court ruling that the UK is failing in its legal duty to protect people from the effects of air pollution¹⁵
- A 2014 European Court of Justice judgment that the government must act to bring pollution within legal limits 'as soon as possible'¹⁶

¹³ VW's cheating is just the tip of the iceberg. Transport and Environment, 21 September 2015.

<http://www.transportenvironment.org/publications/vw%E2%80%99s-cheating-just-tip-iceberg>

¹⁴ Directive 2008/50/EC http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm

¹⁵ News about Supreme Court decision with links to summary and full judgment <http://www.healthyear.org.uk/clientearth-triumph-in-the-supreme-court/>

¹⁶ Court of Justice of the European Union, Judgment in Case C-404/13 The Queen, on the application of ClientEarth v The Secretary of State for the Environment, Food and Rural Affairs, November 2014

<http://curia.europa.eu/jcms/upload/docs/application/pdf/2014-11/cp140153en.pdf>

- The ruling by the UK Supreme Court in April 2015 that new national air quality plans must be drawn up to achieve this.¹⁷
- The publication of new Air Quality Plans for the UK.¹⁸ These are not adequate and Client Earth, which brought the Supreme Court action, is considering its position,¹⁹ but the plan already encourages towns and cities to introduce low emission zones, which would be undermined by new traffic induced by this scheme.

Legality of methods used to assess significance

(Relevant to questions 4.6.1 and 4.6.2)

In addition, on 5 October 2015 a new legal opinion by Robert McCracken QC on the issue of assessing significance was published by the Clean Air in London campaign.²⁰

This says for areas already in breach of the limit values in the Directive (paragraph 50):

“Unless there are already measures in place which would lead to compliance with the Directive before the development is undertaken then any permission for new development which would significantly increase non-compliance with a limit value would in my view be in breach of the obligation to refrain measures which jeopardise attainment of the EU objectives”

And clarifies that, based on the opinion of the European Commission given in a 2013 letter (enclosed at appendix A), compliance with the Directive must not only be at certain nominated locations but at all locations within a zone (paragraph 42):

“Article 13 (1) states that its limit values apply to member states ‘throughout their zones’. This must, in my view, as the European Commission opine in its letter in response to one of 14 October 2013, be interpreted to mean in every part of the zones rather than in all zones. This is the natural meaning of the quoted words. The purpose of these limit values are to protect human health (see for example Preamble Recitals 1 and 2 and the heading of Article 13). It would not be consistent with that purpose simply to average out levels of pollution within the zone. Very heavy, life-threatening pollution could then be tolerated in particularly unfortunate localities.”

And in paragraph 49:

“They make clear that sampling points may be useful as such. They must be representative. It does not follow that the limit values only apply to the identified sampling points.”

For Air Quality Management Areas, governed by Local Air Quality Management Regulations, this opinion should be read in conjunction with paragraphs 7.11 of the Institute of Air Quality Management guidance.²¹

“7.11 For local authorities, there may also be a question of meeting air quality objectives as part of their obligations under Local Air Quality Management Regulations. As has already been noted, the presence of an AQMA that may be affected by a proposed development

¹⁷ UK Supreme Court orders Government to take “immediate action” on air pollution. Client Earth news, 29 April 2015 <http://www.clientearth.org/news/latest-news/uk-supreme-court-orders-government-to-take-immediate-action-on-air-pollution-2844>

¹⁸ Air Quality Plans for the achievement of EU air quality limit values for nitrogen dioxide (NO₂) in the UK, Defra, September 2015 <http://uk-air.defra.gov.uk/library/no2ten/>

¹⁹ Ministers facing new legal action over air pollution. Client Earth, 14 September 2015 <http://www.clientearth.org/news/latest-news/government-facing-new-legal-action-over-deadly-air-pollution-2972>

²⁰ http://cleanair.london/wp-content/uploads/CAL-322-Robert-McCracken-QC-opinion-for-CAL_Air-Quality-Directive-and-Planning_Published-051015.pdf

²¹ <http://cleanair.london/wp-content/uploads/air-quality-planning-guidance-v1.11.pdf>

will increase the sensitivity of the application and any accompanying assessment. The impacts descriptor table acknowledges this and points to a conclusion of significant effect in cases where concentrations of a regulated pollutant are in excess of the objective value. Where the baseline concentrations are close to the objective value at a receptor, but not exceeding it, a case may be made for the development's predicted contribution being significant. It will always be difficult, however, to attribute the exceedance of an objective to any individual source."

The method used by Highways England to comment on whether the air quality impact of the scheme is significant does not conform to this opinion that all locations in a zone must be compliant, or to the Institute of Air Quality Management's recommended assessment of significance in an AQMA.

We recommend the following:

- **The ExA should request a reassessment of the significance of the impact on air pollution of the proposed scheme according to the new legal advice.**
- **The ExA should ask Highways England to comment on how the scheme will support the aims and recommendations of the UK's new draft Air Quality Plans**

3. Safety concerns

(Relevant to questions 6.3 to 6.14)

We welcome question 6.4 which asks:

"Can the applicant please provide a table to represent a comparison of hazards in the following scenarios: the application project; the current operation of the M4; the M4 as a Managed Motorway (as in M42 MM); and generic ALR?"

Highways England's response to our concerns on this issue have so far persisted in making a comparison with baseline (the current motorway) rather than with the alternatives proposed, principally with a Smart Motorway without all-lane running, or with all-lane running only at peak times.

This does not follow the Health and Safety principle of following the best practice available, not simply seeking improvements over the current situation.

The chart in Figure 3.1 is taken from a Highways Agency factsheet on Smart Motorways and summarises the differences between overall risk on standard motorways, the original 'Managed Motorway' peak-time only all-lane-running configuration and the current Smart Motorways as proposed for the M4.²² This suggests that, while the MM ALR design is indeed predicted to be marginally safer than a regular motorway (around 15%), the safety of the original MM with the hard shoulder only used at peak times, is significantly better than either: around 63% safer than a standard motorway.

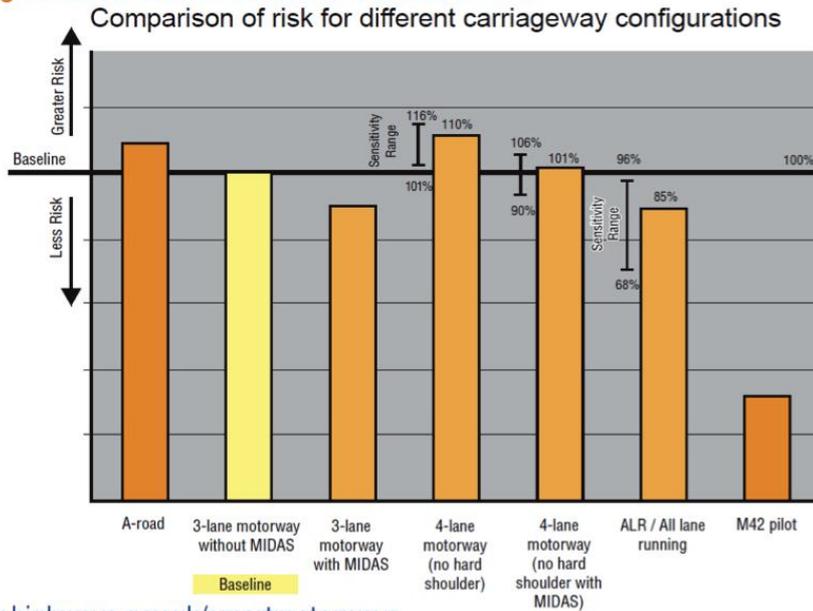
The chart is unreferenced in the Factsheet but the footnotes give the likely sources of data.²³

²² Smart Motorways Factsheets, Highways England, January 2014 <https://www.gov.uk/government/publications/smart-motorways-driver-information>

²³ Ibid and M42 MM Monitoring and evaluation, Three year safety review, 2011 <http://www.highways.gov.uk/knowledge/publications/m42-mm-monitoring-and-evaluation-three-year-safety-review/>

Fig 3.1: Risks of different motorway configurations and operations

Comparing risk assessment results and accident data



The application documents have included this statement on safety - in the Environmental Statement chapter 13:²⁴

"13.8.14 An important objective of the Scheme is to continue to deliver a high level of safety performance of the network using smart motorway techniques. By way of reference, a study of the safety benefits of the M42 pilot smart motorway reported a 55.7% improvement in (personal injury) accidents as a result of that scheme (Ref 13-13). Again, as a smart motorway scheme which implemented similar technology to that proposed as part of this Scheme, the M42 is considered to be an appropriate comparator for the Scheme."

The evidence above shows that, in contrast, it is very unlikely that the M4 scheme would be as safe as the M42 Managed Motorway and is likely in fact to be only marginally safer than a regular motorway. Much higher levels of safety could be achieved without all-lane running.

In our original short representation we said:

"If Highways England were to follow the duty of care obligation to follow good practice they would implement this scheme as a 'Managed Motorway' without all-lane running."

We do not believe Highways England's responses to these points have yet addressed this issue and more evidence is needed. They say in response:

"The original Managed Motorway design (the M42 Pilot) suggests a 60% reduction in safety risk compared to the baseline (reference Annex E of the Engineering and Design Report (Application Document Reference Number 7.3)). However, the original design was more costly, visually intrusive, resource intensive and provided less journey time benefits than the design proposed for the M4 J3-12 scheme, which has been shown by the hazard log assessment not to compromise safety."

²⁴ M4 Smart Motorway scheme Environmental Statement, Chapter 13. Highways England, 2015
http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/TR010019/2.%20Post-Submission/Application%20Documents/Environmental%20Statement/6-1-ES-Chapters_13-Effects-on-all-travellers.pdf

This statement persists in comparing safety only with the current 'non Smart' motorway configuration and gives no positive safety reasons for switching to all-lane running in addition to adding Smart Motorway technology. The new gantry designs, monitoring, safety and variable speed limit technology can all be implemented without all-lane running and we believe the correct comparison is with alternative designs and operational regimes, not with the baseline.

The reasoning above also gives only driver time savings as the reason for making the change to all-lane running. These savings are likely to be temporary and to cause induced traffic in the long term. They are not a reason to accept increased risks for drivers, emergency service personnel and others on the road. (See also section 5 on alternatives.)

In addition, Highways England claims the support of the Institute of Advanced Motorists. However, this organisation clearly remains cautious about the new all-lane running Smart Motorway configuration and is seeking further evidence from early schemes. The full IAM policy statement, as cited by Highways England is given below.²⁵

"IAM Policy

- *The IAM support SMART motorways, studies show most drivers like them and they reduce congestion flow without jeopardising safety*
- *SMART motorways have been intensively modelled but have yet to fully prove themselves in the real world. The early schemes must be used as a test bed for future implementation*
- *Most breakdowns and incidents on motorways are avoidable and the IAM will work closely with the Highways Agency to improve driver behaviour on our motorway network*
- *Intensive education campaigns are needed to explain the new road designs to drivers who often only use motorways on an occasional basis*
- *Compliance with lane control signals is key to the success of SMART motorways and the IAM support enforcement of Red X signs providing it is done consistently across the network*
- *The government should continue to have a long term plan to widen the most congested sections of the motorway network*
- *The IAM's advice for driving on a managed motorway is: keep to the speed limit displayed, obey Red X signs, don't change lanes; if you believe your car is in trouble try to get into an emergency refuge where you will be safe, if you break down in a running lane wait for help in the car."*

We look forward to reading the responses to questions 6.3 to 6.14 and will provide further comment when they are published.

4. Carbon impact

(Relevant to question 1.3)

Highways England's response to our original representation concedes the scheme will have a large impact on carbon emissions and argues that other measures implemented by the Government will serve to prevent this scheme from having an impact on the achievement of overall targets.

Since the ES was published, the shocking revelations about car-makers and emissions outlined in the section above on air pollution have emerged, and the methods used to subvert the air pollution tests have also been revealed to have an impact on fuel consumption and carbon emissions. This means that the carbon assessment of this scheme is in question and may in fact be much higher than calculated.

²⁵ Policy – Smart Motorways. Institute of Advanced Motorists, accessed October 2015
<http://iam.org.uk/policymanagedmotorways>

Transport and Environment in Brussels released a report in 2015 showing that the gap between official test results for CO2 emissions/fuel economy and real-world performance has increased to 40% on average in 2014 from 8% in 2001.²⁶

These issues should be fully examined and the adverse effect on carbon emissions and targets should be considered as a significant additional negative impact when assessing whether to approve the scheme.

5. Alternatives to the proposed scheme

Although we set out our points about alternative schemes under their own heading in our initial representation, Highways England has chosen only to consider these under 'noise'. In contrast, the ExA has already asked for further alternatives to be looked at in terms of safety (question 6.4) and we believe that further examination of alternatives against other impacts is also needed.

We believe that there are many alternatives to this scheme, including enhanced public transport, smarter choices to encourage modal shift, and improved walking and cycling for short journeys. However, even within the same basic 'Smart Motorway' scheme there are two clear additional alternatives whose potential benefits should be considered at this stage of the Examination.

Below we have summarised the likely impacts of four different options, only two of which are currently under consideration in the assessments provided. We believe that there is a wealth of evidence that options 2 and 3 below would each provide a significant portion of the transport benefits sought and avoid the most significant harms in terms of safety, traffic impacts, pollution, carbon and noise of the current proposals.

Each of the options shown in Table 5.1 should be considered in full in the course of this examination and a business case, safety assessment and revised ES provided by the applicants for options 2 and 3.

²⁶ Mind the Gap 2015 – Closing the chasm between test and real-world car CO2 emissions. Transport and Environment, 2015 <http://www.transportenvironment.org/publications/mind-gap-2015>

Table 5.1 – comparison between Option 4 (current scheme) and three alternatives

Matrix of likely impacts compared with Option 4	Option 1 – do minimum (already assessed)	Option 2 – Smart Motorway technology with hard shoulder and no all-running	Option 3 – Smart Motorway technology with only peak-time hard shoulder running	Option 4 – Smart Motorway with permanent all-lane running
Landscape impacts	Very positive – no change from current situation	Positive – less land and construction required	Neutral – same design as Option 4 just different operation	Neutral
Carbon impacts	Very positive – no induced traffic or carbon increase expected compared with current situation	Very positive – variable speed limits can reduce flow breakdown and stationary traffic, and induced traffic expected to be minimal	Positive – variable speed limits and ALR at peak times can reduce congestion, but will also cause some induced traffic	Neutral
Air pollution impacts	Positive – no additional pollution expected	Positive – potentially an improvement over do minimum. Variable speed limits can reduce flow breakdown and stationary traffic	Positive - variable speed limits and ALR at peak times can reduce congestion, but will also cause some induced traffic	Neutral
Safety impacts	Neutral – current motorway standards and Smart Motorways are approximately equivalent in overall risk	Very positive – Smart Technology and the permanent availability of the hard shoulder would be the very best practice available, likely to be more than 60% safer than current motorways	Very positive – risk reduction for this configuration is assessed as around 60% vs current motorways	Neutral
Driver time savings on motorway re business case	Negative – no Smart Motorway technology would mean no variable speed limits to help reduce flow breakdown at busy times	Slight negative – some benefits in reducing delays at busy times with variable speed limits, but no new capacity	Slight negative – availability of new hard shoulder capacity at busy times would enable reduced delays	Neutral – potentially slight negative in the long term if induced traffic leads to congestion returning
Traffic impacts on other roads due to induced traffic flowing from the motorway	Positive – no induced traffic expected if the motorway isn't changed	Positive – some impacts due to higher throughput of cars at busy times adding to peak time flows on local roads but no significant new capacity so induced traffic will be minimal	Slight positive – new capacity at peak times will result in induced traffic flowing onto local roads	Neutral

Appendix 1 - Advice on air pollution compliance and worsening within a zone from the European Commission

Ref. Ares(2014)409541 - 19/02/2014



EUROPEAN COMMISSION
DIRECTORATE-GENERAL
ENVIRONMENT
Directorate C - Quality of Life, Water & Air
ENV.C.3 - Air & Industrial Emissions

Brussels,
ENV.C.3/MG/dp ARES(2014)

Mr. Simon Birkett
Founder and Director
Clean Air in London
Per email: [REDACTED]

Subject: Your email dated 14 October 2013

Dear Mr. Birkett,

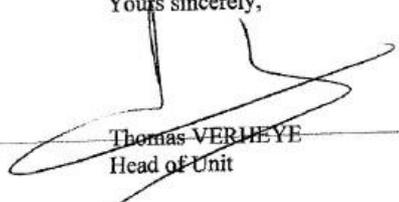
Thank you for your letter of 14 October by which you seek clarification on certain provisions of Directive 2008/50/EC, and my apologies for the delay in replying.

The authoritative interpretation of EU law is the prerogative of the EU Court of Justice; subject to this caveat, your understanding of the Directive largely coincides with the way we would interpret the relevant provisions, if requested by the Court. In particular:

1. The obligation to achieve compliance with the limit values includes the obligation to maintain such air quality status once compliance is achieved (Article 13, first paragraph).
2. With the only three exceptions listed in Annex III (Section A, paragraph 2), limit values must indeed be complied with throughout the territory of any given air quality zone, and compliance should not be determined nor assessed as an "average" of concentrations measured in different locations within the same zone.
3. Unlike target values, which create an objective to be achieved "where possible" or "where not entailing disproportionate costs", limit values create an obligation of result which is unconditional and absolute, irrespective of costs (Article 2, paragraphs 5 and 9).
4. Where air quality is already good, Article 12 of the Directive applies. This provision spells out in legal terms the "non-deterioration" principle, according to which Member States shall not only maintain the levels below the limit values, but also "endeavour to preserve the best ambient air quality compatible with sustainable development".

Finally, I have no objections to the disclosure or dissemination of this letter, to whom it might concern.

Yours sincerely,


Thomas VERHEYE
Head of Unit

October 2015

Sian Berry and Chris Todd
Campaign for Better Transport

Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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